



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,142	12/15/2003	Qinghua Li	42P17466	6354
59796	7590	08/08/2007	EXAMINER	
INTEL CORPORATION			SMARTH, GERALD A	
c/o INTELLEVATE, LLC				
P.O. BOX 52050			ART UNIT	
MINNEAPOLIS, MN 55402			PAPER NUMBER	
			2109	
			MAIL DATE	
			DELIVERY MODE	
			08/08/2007	
			PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/737,142

Applicant(s)

LI ET AL.

Examiner

Gerald Smarth

Art Unit

2109

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/15/07.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

DETAILED ACTION

1. The instant application having Application No. 10/737142 has a total of 22 claims pending in the application; there are 3 independent claims and 19 dependent claims, all of which are ready for examination by the examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1-22 rejected under 35 U.S.C. 102(b) as being anticipated by Kasami(US 2002/0181492).

Regarding claim 1, Kasmi teaches an apparatus, comprising: a first electronic device adapted to compare a first indicator of a predicted duration of a first transmission to a second electronic device with a second indicator of a predicted duration of a second transmission to a third electronic device; adjust starting times of at least one of the first and second transmissions to cause the first and second transmissions to end at approximately a same time; and transmit the first and second transmissions using the adjusted starting times. *(Kasmi discloses in the transmission timing determining section 64, it is determined whether or not the data packet has the packet length which can finish the transmission of the data packet at the timing of the transmission end time, as*

shown in step 44 of FIG. 18. If the data packet cannot be transmitted before the transmission end time, the transmission of the data packet is inhibited, as shown in step S42 of FIG. 18.)

Regarding claim 2, Kasami teaches the apparatus of claim 1, as disclosed above. Kasami further teaches wherein the first electronic device is further adapted to receive a first response comprising a first acknowledgment to the first transmission from the second electronic device and to receive a second response comprising a second acknowledgment to the second transmission from a third electronic device. *(Kasami discloses a receiving section including first and second receiver modules configured to sense first and second reception signals to be set in a reception mode, and receive the first and second reception signals from the another wireless communication stations in a reception mode. A responding section configured to respond to an end timing of receiving the first and second reception signals in the receiving section to generate a reception end signal; Page 2 paragraph 15 & 16)*

Regarding claim 3, the apparatus of claim 1, as described above. Kasami further teaches wherein the first electronic device is further adapted to include a poll in the first transmission and to include a poll and other data in the second transmission. *(Kasami when an enable flag is set by the first transmission control section 17, and a start flag for starting a transmission wait is set by the transmission waiting state setting section 15; Page 6 column 90 line 1-4)*

Regarding claim 4 Kasami teaches the apparatus of claim 1, as described above. Barratt further teaches as wherein the first electronic device is further adapted to set a

Art Unit: 2109

transmission period for the first and second transmissions based on a longer of the predicted durations of the first and second transmissions. *(Kasami discloses the access point 1 waits for a time duration $td1$ from the reception of the RTS packet to transmit CTS (clear to sent) packet to the station 4-1, as shown in step S31; page 9 paragraph 126 line 9-12)*

Regarding claim 5, Kasami teaches the apparatus of claim 1, Kasami teaches wherein: the first transmission and the second transmission are to have different data rates; and the predicted durations of the first and second transmissions are partly based on the different data rates. *(Kasami discloses for example, as shown in FIG. 7, a description of a predetermined time period 'Tx' may not be given at the packet header, and a transmission rate and a packet data size may be described instead of the description of the predetermined time period; Paragraph 86 line 2-6)*

Regarding claim 6, Kasami teaches the apparatus of claim 1, further Kasami teaches wherein the first electronic device comprises a computing platform to perform said comparing. *(Kasami discloses in the access point 101, the wireless communication modules 102-1, 102-2 are controlled by control section 801, and the control section 801 monitors the traffics of the data transmission and reception between the access points and the stations; Page 13 paragraph 191 line 7-11)*

Regarding claim 7, Kasami teaches the apparatus of claim 6, as described above. Kasami further teaches comprising at least four modulator/demodulators coupled to the computing platform. *(Kasami discloses processing of this reception*

Art Unit: 2109

signal includes modulation and demodulation of the reception signal; Page 3 line

Paragraph 65 line 11-13)

claim 8, Kasami teaches the apparatus of claim 7, as described above. Kasami further teaches comprising at least four antennas, each of the at least four antennas coupled to at least one of the at least four modulator/demodulators. *(Kasami discloses thus, if the wireless module section 102-2 use a different channel as that of the wireless module section 102-1 or have a directivity antennas which use a same channel as that of the wireless module 102-1; Page 11 Paragraph 158 line 1-8)*

Regarding claim 9, Kasami teaches the apparatus of claim 1, as described above. Kasami further teaches wherein the first electronic device comprises a base station. *(Kasami discloses the present invention relates to a wireless communication station and, more particularly, to an access point which communicates with wireless communication stations via a plurality of channels; Page 1 column 3 line 1-4)*

Regarding claim 10, Kasami teaches the apparatus of claim 1, as described above. Kasami further teaches wherein the second and third electronic devices comprise mobile devices. *(Kasami discloses in addition, the stations 4-1 to 4-3 are generally installed in their fixed locations, but may be incorporated in a mobile unit; Page 3 line 9-11)*

Regarding claim 11, Kasami teaches the apparatus of claim 1, as described above. Kasami teaches wherein the first electronic device is further adapted to transmit the first and second transmissions using spatial division multiple access techniques. *(Kasami discloses, communication is executed between the access point 1 and the*

Art Unit: 2109

stations 4-1 to 4-3 each in accordance with the space division multiplexing access (SMDA) method; Page 3 line 4-7)

Regarding claim 12, Kasami teaches a method, comprising: making a comparison of a first indicator of a predicted duration of a first transmission to a first electronic device with a second indicator of a predicted duration of a second transmission to a second electronic device; and beginning a transmission of a shorter of the first and second transmissions after a delay approximately equal to a difference between the predicted duration of the first transmission and the predicted duration of the second transmission; *(Kasami discloses In the packet length-determining section 63, a time period for transmitting the data packet is calculated, as shown in S43 of FIG. 18. The calculated time duration is supplied to the transmission timing determining section 64 as shown S24 of FIG. 17; Page 10 Paragraph 138 line 19-23)*

-Kasami teaches beginning a transmission of a longer of the first and second transmissions; *(Kasami discloses the access point 1 waits for a time duration td_1 from the reception of the RTS packet to transmit CTS (clear to sent) packet to the station 4-1, as shown in step S31; page 9 paragraph 126 line 9-12)*

-wherein the first and second transmissions use spatial division multiple access techniques. *(Kasami discloses FIG. 1 shows a wireless LAN system in which a space division multiplexing access (SDMA) method is applied as a wireless communication system according to a first embodiment of the present invention; Page 3 line 1-4)*

Regarding claim 13, Kasami teaches the method of claim 12, as described above. Kasami further teaches comprising ending the first and second transmissions

Art Unit: 2109

at approximately a same time. *(Kasami discloses a responding section configured to respond to an end timing of receiving the first and second reception signals in the receiving section to generate a reception end signal; page 3 paragraph 15 line 1-6)*

Regarding claim 14, Kasami teaches the method of claim 13, as described above. Kasami also teaches further comprising beginning an acknowledgment timeout period after said ending the first and second transmissions. *(Kasami discloses the target station transmits an acknowledge response (ACK) packet to the access point after a predetermined period if data on the received packet has been normal; Page 1 Paragraph 6 line 1-3)*

Regarding claim 15, Kasami teaches the method of claim 12, as described above. Further Kasami teaches comprising receiving a first response from the first electronic device and receiving a second response from the second electronic device substantially simultaneously. *(Kasami discloses therefore, the SDMA method can improve its communication quality and can achieve simultaneous communication between the access point and a plurality of stations; Page 1 paragraph 7 line 6-9)*

Regarding claim 16, Kasami teaches the method of claim 15, as described above. Further Kasami teaches wherein said receiving the first and second responses comprises receiving a beginning of the first and second responses approximately an interframe space after an end of the first and second transmissions. *(Kasami discloses back-off processing is started in response to the transmission enable signal, thereby entering a transmission waiting state in which transmission is waited, and a transmission signal is transferred to each of the wireless stations 4-1 to 4-3; Paragraph*

Art Unit: 2109

67 line 20-25)

Regarding claim 17, Kasami teaches the method of claim 12, as described above. Further, Kasami teaches describes comprising using data rates to determine the predicted durations. *(Kasami discloses for example, as shown in FIG. 7, a description of a predetermined time period 'Tx' may not be given at the packet header, and a transmission rate and a packet data size may be described instead of the description of the predetermined time period; Page 6 line 7-9)*

Regarding claim 18, Kassami teaches a machine-readable medium that provides instructions, which when executed by a processing platform, cause said processing platform to perform operations comprising: determining predicted durations of multiple transmissions to be transmitted from an electronic device; adjusting start times for at least some of the transmissions to cause the multiple transmissions to end at approximately a same time; and transmitting the multiple transmissions substantially simultaneously using the adjusted start times and using spatial division multiple access techniques. *(Kasmi discloses in the transmission timing determining section 64, it is determined whether or not the data packet has the packet length which can finish the transmission of the data packet at the timing of the transmission end time, as shown in step 44 of FIG. 18. If the data packet cannot be transmitted before the transmission end time, the transmission of the data packet is inhibited, as shown in step S42 of FIG. 18.)*

Regarding claim 19, Kassami teaches the medium of claim 18, as described above. Kassami discloses wherein said determining comprises using data rates to determine said predicted durations. *(Kasami discloses for example, as shown in FIG. 7,*

Art Unit: 2109

a description of a predetermined time period 'Tx' may not be given at the packet header, and a transmission rate and a packet data size may be described instead of the description of the predetermined time period; Page 6 line 7-9)

Regarding claim 20, Kassami teaches the medium of claim 18, as described above. Kassami further teaches wherein the operations further comprise receiving responses to the multiple transmissions substantially simultaneously. *(Kassami discloses in addition, the packet time length and packet reception end time of the simultaneously received data packet 302-0 as well are notified to the element 102-2; Page 12 paragraph 163)*

Regarding claim 21, Kasami teaches the medium of claim 20, as described above. Kasami further teaches wherein the operations further comprise initiating a timeout period for reception of an acknowledgment to at least one of the multiple transmissions. *(Kasami discloses back-off processing is started in response to the transmission enable signal, thereby entering a transmission waiting state in which transmission is waited, and a transmission signal is transferred to each of the wireless stations 4-1 to 4-3; Paragraph 67 line 20-25)*

Regarding claim 22, Kasami teaches the medium of claim 20, as described above. Kasami teaches wherein said receiving comprises receiving beginnings of the responses approximately an interframe space after an end of the multiple transmissions. *(Kasami discloses back-off processing is started in response to the transmission enable signal, thereby entering a transmission waiting state in which*

Art Unit: 2109

transmission is waited, and a transmission signal is transferred to each of the wireless stations 4-1 to 4-3; Paragraph 67 line 20-25)

Conclusion

4. The following prior art made of record and not relied upon is cited to establish the level of skill in the applicant's art and those arts considered reasonably pertinent to applicant's disclosure. See MPEP 707.05 ©.

5. The following reference teaches execution of trial data.

US 2000/6047189

US 2003/0033394

US 2004/6982968

US 1997/5619530

US 1997/5644576

The examiner requests, in response to this Office action, support be shown for language added to any original claims on amendment and any new claim. That is indicated support for newly added claim language by specifically pointing to page(s) and line no(s) in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application.

Art Unit: 2109

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gerald Smarth whose telephone number is (571)270-1923. The examiner can normally be reached on Monday-Friday(7:30am-5:00pm)est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu can be reached on (571)272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



JEFFREY PWU
PRIMARY EXAMINER